

REMARKS/ARGUMENTS

Favorable reconsideration of this application is respectfully requested.

Claims 1-19 are pending in the present application. Claims 1, 8 and 9 are amended and new Claims 10-19 are added by the present Amendment. Support for this Amendment can be found in the specification and claims as originally filed. No new matter is added.

In the outstanding Office Action, Claims 1-3, 5, 8 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Publication No. 2003/0053093 to Eom in view of U.S. Patent No. 5,030,986 to Dwyer, III. Claim 4 was rejected under 35 U.S.C. § 103(a) as unpatentable over Eom in view of Dwyer, III and further in view of U.S. Patent No. 6,499,402 to Sikes et al. (herein “Sikes”). Claims 6 and 7 were indicated as allowable if rewritten in independent form.

Applicants thank the Examiner for the indication of allowable subject matter. However, these claims have been presently maintained in dependent form because Applicant considers the amended independent claims patentably distinguishing over the prior art.

Applicant and Applicant’s representatives thank Examiner Pham for the courtesy of an interview extended to Applicant’s representatives on October 28, 2005. During the interview, differences between the present invention and the applied art, and the rejections noted in the outstanding Office Action were discussed. The Examiner agreed that the amended claims, presented as new independent Claims 11, 18 and 19, distinguished over the art of record. Arguments presented during the interview are reiterated below.

Amended independent Claim 1 is directed to a misalignment detector comprising, *inter alia*, a ***two-dimensional image sensor*** configured to read a position detection pattern that is formed on an image carrier.

Eom describes an apparatus to control color registration and a method of calculating a color registration error. As depicted in Figure 7, a light source 101-1 emits light beams

focused by lens 101-2 onto a registration mark 120. The light beams are reflected from the registration mark 120 and focused by lens 101-4 onto the photodetector 101-3. The beams received by the photodetector 101-3 are used to compensate for color registration errors.

Eom describes detecting the amount of light emitted from the emitter,¹ but does not teach or suggest reading an image pattern two-dimensionally.

Dwyer, III describes a film printing and reading system including a focal mechanism. As depicted in Figure 10, infrared emitting element 901 emits infrared light through lens 902 and beam splitter 905. The light is focused by lens 930 onto recording medium 940. When the recording medium 940 lies in the focal plane of lens 30 the light will be reflected along the same path in the opposite direction. When the light hits the beam splitter 905 some will be reflected through aperture 906 to photo sensor 950. If the recording surface 940 has moved position and is not in the focal plane of lens 30, the light will be intercepted and scattered resulting in less light reaching photo sensor 950. Based on the amount of light detected for photo sensor 950, control device 13 provides a signal to actuators 971 and 972 to move recording medium 940. The photo sensor 950 detects the amount of light, but does not teach or suggest reading an image pattern two-dimensionally, as required by amended Claim 1.

Therefore, Eom in view of Dwyer, III does not teach or suggest a misalignment detector comprising a two-dimensional image sensor configured to read a position detection pattern that is formed on an image carrier. This claimed feature makes it possible to detect the image pattern of the main scanning direction with higher accuracy.

Accordingly, Applicant submits that independent Claim 1 and Claims 2-7 depending therefrom, are patentably distinguished over the cited combination of references.

¹ Eom at ¶ 0086.

Although they differ in scope, amended independent Claims 8 and 9 and new independent Claim 10 recite, *inter alia*, a two-dimensional image sensor. As previously discussed, Eom in view of Dwyer, III do not teach or suggest this claimed feature. Accordingly, Applicant submits that independent Claims 8 and 9 are patentably distinguished over the cited combination of references.

New Claims 11-19 correspond to original Claims 1-9 amended to include a second reflecting surface, as discussed in the interview of October 28, 2005.

New independent Claim 11 is directed to a misalignment detector comprising, *inter alia*, a synthesizing unit that passes the light of the light source so as to illuminate the position detection pattern, and collects and reflects a light reflected *off a first reflecting surface* from the position detection pattern and a focusing unit *including a second reflecting surface* that focuses the light reflected from the synthesizing unit on the image sensor.

In a non-limiting example, Fig. 1 shows an image forming apparatus with a first reflecting surface, total reflective surface 1a, and a second reflecting surface, reflective surface 2a.

As previously discussed, Eom describes light beams being reflected from the registration mark 120 and focused by lens 101-4 onto the photodetector 101-3. Eom does not disclose or suggest a *second reflecting surface*.

In addition, although Dwyer, III, as previously discussed, describes beam splitter 905 reflecting light onto photo sensor 950, Dwyer, III does not disclose or suggest a focusing unit including a *second reflecting surface*.

Therefore, Eom in view of Dwyer, III does not teach or suggest a misalignment director comprising a synthesizing unit that passes the light of the light source so as to illuminate the position detection pattern, and collects and reflects a light reflected *off a first reflecting surface* from the position detection pattern and a focusing unit *including a second*

reflecting surface that that focuses the light reflected from the synthesizing unit on the image sensor.

Accordingly, Applicant submits that new independent Claim 11 and Claims 12-17 depending therefrom, are patentably distinguished over the cited combination of references.

Although they differ in scope, new independent Claims 18 and 19 recite, *inter alia*, a synthesizing unit *including a first reflecting surface* and a focusing unit *including a second reflecting surface*. As previously discussed, Eom in view of Dwyer, III do not teach or suggest these claimed features. Accordingly, Applicant submits that independent Claims 18 and 19 are patentably distinguished over the cited combination of references.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Surinder Sachar
Registration No. 34,423

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

GJM:SS:JD:dnf